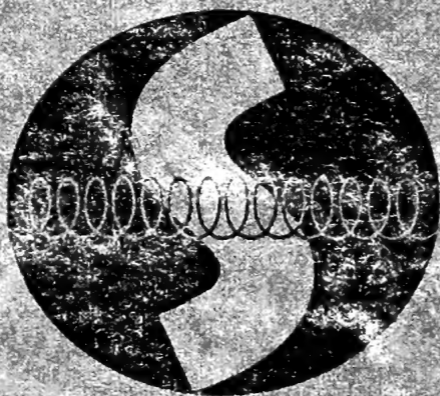


10220 - 10325

THE SPIRAL



NOTE BOOK

200

REG. U. S. PAT. OFF.

10¢

A PRODUCT OF **Wesley** DAYTON 2, OHIO

\$5.⁰⁰ Reward

for return to

Dr. Arthur Cronquist
New York Botanical
Garden

Bronx, New York
10458

U. S. A.

10220 - September 26, 1965

Chihuahua, Mexico.

Swale in sand dunes

6 miles south of Samalayuca and 38 miles south of Juarez.

Plants annual. Rays

4-8, mostly 5 or 8,

rich lavender-pink.

stipitate-based,
deeply trifid.

Elevation about 4400 feet.

Palafolia sphacelata

~~(Nutt.) Cory~~

(Nutt.) Cory

U. 587

Palafolia (16)

10221 - Sept. 21, 1965

Chihuahua, Mexico.

Sama Desert 36 miles
south of Samalayuca
and 68 miles south of
Juarez. Elevation about
4100 feet. Plants
arbores. Heads yellow.
Rays mostly 8, sometimes
10.

Pectis papposa Harv. + Gray

Pectis (15)

10222 - Sept. 27, 1965

Chihuahua, Mexico. Rocky,
felsitic east slope in desert
grassland (above the Larrea
Zone), ~~miles north of~~
~~Parrita and~~ 56 miles north
of Chihuahua. Elevation
about 5100 feet. A single
much-branched shrub nearly
1 m. tall. Leaves indiscrim-
inately opposite or alter-
nate. Heads yellow, with
7-10 (mostly 8) rays.

Viguiera cordifolia Gray

Viguiera (16)

10223 - September 28, 1965
Chihuahua, Mexico, ~~Desert~~
Same place as 10222.

Stems loosely clustered
on a fibrous-rooted base.
Corollas and styles
blue-lavender.

Ageratum ✓

corymbosum Zuccagn.

Ageratum

(14)

10224 - September 27, 1965
Chihuahua, Mexico.
Desert grassland (above the
Larrea zone), ~~miles~~
~~north of Parí and~~
56 miles north of Chihua-
hua. Elevation about 5100
feet. Rays 21-35, white
on top, pink-lavender
beneath. Disk yellow,
Aphanostephus arizonicus
Gray
rel eff. (1) ✓
✓
Achnanthes (15) 21 25

10225 - Sept. 27, 1965

Roadside weed in desert
grassland (above the Santa
Zone), miles north of
~~Pasmita~~ and 56 miles north
of Chihuahua, Chihuahua,
Mexico. Elevation about
5100 feet. Selected
small specimens. Larger
plants more freely branched,
leafy to near the top.
Heads yellow. Rays 32-58,
in several series, becoming
reflexed in age.

Baileya pleniradiata Harv. & Gray

Baileya pleniradiata (6) ✓

10226 - September 27, 1965

Chihuahua, Mexico.

Desert grassland 35 miles
north of Chihuahua.

Elevation about 5300'.

Shrubs mostly 4-7 dm. tall.

Heads yellow. Rays 7-14,
mostly 8 or 13.

Senecio longilobus Benth. ✓

10226
Senecio (16)

10227- Sept. 28, 1965

Chihuahua, Mexico.

On west-facing, rocky, alluvial slope overlooking a dry wash, with acacia and other desert shrubs, about 23 miles southeast of Chihuahua. Elevation about 5000 feet. Leaf shrubs about 5 dm. tall. Heads yellow. Rays 13-17, relatively short.

Zexmenia brevifolia ✓

A. Gray ✓

Zexmenia brevifolia (f)

10228 - Sept. 28, 1965
California, 1965
Moist swale along the
roadside, 4.5 miles south-
east of Tehuacua and 2
miles northwest of Macquie
Elevation about
3800 ft. Plants colonial
by rhizomes with scat-
tered stems. ~~Heads~~ Heads
yellow. Raylets by num-
bers, mostly 10-16

Solidago scabrida DC.

Solidago scabrida (15)

10229 - Sept. 28, 1965
Same place as 10228.

Plants spreading below
ground, with widely
scattered stems. Disk
yellow. Rays 14-24,
lavender.

Aster pauciflorus Nutt.

Aster (7)

10230 - Sept. 28, 1961
Same place as 10228.
Stems solitary or
loosely branched, brown
and densely tomentose
above, glabrous below.
Corolla and styles
blue-lavender.

Eupatorium betonicifolium
Mill. ✓
✓

Eupatorium (15)

10231 - Sept. 28, 1965

Same place as 10228

Plants shallow-rooted
annuals. Flowers
rather light yellow.
Collected small speci-
mens; larger plants
up to about 1 m. tall
and nearly as broad.

Flaveria trinervia V.
(Sprengel) Mohr.

Flaveria (15)

10232 - Sept. 28, 1965
Same place as 10228.
Stems clustered on a
perennial root. Stems
and leaves conspicuous,
glaucous. Involucres
greenish-yellow.
Flowers yellow.

Flaveria chloraefolia Gray

Helianthus

(15)

10233 - Sept. 28. 1965
Chihuahua, Mexico
With acacia and other
desert shrubs in Larrea
Zone in the desert between
Camargo and Jimenez,
22 miles south of
Camargo. Elevation
about 4400 feet.

Shrubs up to about 1
m. tall, glabrous and
glutinous. Heads
lvs. yellow.

Selloa glutinosa Spreng.

150

Selloa sp. 150

10234 - Sept 29, 1965
Chihuahua, Mexico
With acacia and other
desert shrubs around a
rocky, pebbly knoll in
the desert about 16 miles
west-southwest of
Jimenez. Elevation about
5100 feet.

Shrubs 4-8 dm. tall.
Heads dull white, with
mostly 5 minute tubular rays.
Parthenium incanum H.B.K.
✓ ✓

Parthenium (15)

10735 - Sept. 29, 1925
Chihuahua, Mexico.

Roadside weed in
thorn-desert country
7 miles east of Parral.
Elevation about 5700'.

Plant strictly annual.
Heads whitish, with 5
small white rays.

Parthenium bipinnatifidum
(Ortega) Rollins

Parthenium bip. 10735

10236 Sept. 29, 1965
Chihuahua, Mexico.
Moist soil around a
water-hole in thorn-
scrub country 7 miles
east of Parral. Elevation
about 1000 m. Plants

Shrubby, rooted annuals.
Ray mostly 5, the
basal half orange, the
distal half yellow.

~~*Parsonsia* (2)~~

Bidens ferulaefolia
(Jacq.) DC.

exes (16)

10237. Sept. 29, 1965
Same place as 10236
Plants odorless. Heads
yellow. Ray short, mostly
about 8, or only 5 on
smaller heads.

Dyssodia papposa (Vent.)
Witchc.

Tag. (15)

10236 May 19, 1963

~~Disturbed soil~~

Chihuahua, Mexico.

Disturbed soil along
the roadside in thorny
desert country 9 miles
east of Pánuco. Elevation
about 5700'. Annual
rainfall Raynson,
perennial, (4) 5.13,
depending on the size
of the bed.

Zinnia peruviana (L.) L.

1

Zinnia p. B.

10239 Sept. 29, 1965
Chihuahua, Mexico.

Same place as 10238
Disk dark. Rays
yellow, 10-13, after
13.

Sanvitalia procumbens
Lam. ✓

- Same as

9 ✓

10240 - Sept. 29, 1966
Chihuahua, Mexico
Same place as 10238
Heads bright orange.
Rays mostly 13, or on
smaller heads as few
as 8.

Dyssodia porophylla (Cav.)
Cav.

ssp. *cancellata* (Cass.)

Strother

var. *cancellata* (Cass.) Strother ✓

✓

Dyssodia cancellata (3)

10241 - Sept. 23, 1941

Indian, N. M.

Thompson Canyon

Shrubbery, shrubs in
the desert 9 miles east
of Gallup. Elevation
about 5700'. Heads yellow
rayed 3-4 per flower,
leaves very waxy.

Hymenoxys scaposa

(DC.) Parker

✓

Hymenoxys

(5)

10242 - Sept. 30, 1965
Chihuahua, Mexico.
In thin soil of ledges on
paleo-tertiary outcrops in
desert savanna land
27 miles south of Pinal
and 10 miles south of
Villa Matamoros.
Elevation about 5700'.
Heads yellow, with 2-3
short rays.

Heterospermum pinnatum
Cav. ✓
✓

Tagetoid - 2-3 yellow rays. 16

12012 - Sept. 30 - 1942

Samplars 10112.

Plants strongly
licorice-scented.

Disk yellow. Rays 0-2

on different heads even

the same plant. A head

white. Disk corollas

mostly 4-lobed, some 5-lobed

Tagetes micrantha Cav.

Tagetes micrantha (16)

52001 - Sept. 30, 1965

Same place as 10242
Rich orange. Rays mostly
5, bright yellow, with
slender tube. The
tubular part of the
corolla is slightly
inflated and expressed

Zinnia tenella B.L. Robins.

✓

✓

Yellow

(5)

100 7 - Sept - 1905

Chihuahua Mexico. In
thin soil around fissure
outcrops in desert savanna
land; also a roadside weed,
27 miles south of Pinar
and 13 miles south of
Villa Matamoros. 5700'

Phyllaries green with
purple tips. Heads yellow,
~~the~~ disciform, with a
single inconspicuous
pistillate flower and several
stam. flowers.

Schkuhria anthemoides Coult.

(Helvuid)

(2) ✓

15246 - September 30, 1964
Chihuahua, Mexico. Pockets
of soil in crevices East-facing
felsitic outcrops in desert
savanna. Land 10 miles
south of Matamoros and
27 miles south of Pánuco.
Elevation about 5700'.
Delicate annuals with
thin, soft leaves, flowers
white, very faintly
lavender-tinted.

Stemodia micrantha Lag.

Stemodia (16)

10257 - Sept. 30, 65.

Chihuahua, Mexico. Same
Place as 10246. Disc

yellow. Rays 5, white
very short.

ray achenes epappose.

pappus of disk achenes consisting
of 18-19 oblanceolate ~~thin~~
scales, distally fimbriate.

✓
Galinsoga semicalva
(Gray) St. John + White

✓
Galinsoga semicalva (9)

10248 - September 30, 1965

Chihuahua, Mexico.

Species in east-facing
felsitic rock outcrops
in desert savanna land
10 miles south of Villa
Motarinos and 27 miles
south of Pajarito. Elevation
about 5700 feet. Loosely
branched, slender-stemmed
shrub about 1 m. tall.

Fls. yellow, with mostly
5 sepals. Chromosome no. det.
by R.C. Jackson: as $n = 17$.

Viguiera cordifolia Gray ✓

Viguiera (5) - *serotina*? ✓

0249
2000 ft. base of forest.
each outcrops in desert
savanna land 10 miles
south of Villa Matamoros
and 27 miles south of
Parral, Chihuahua, Mex.
Elevation about 5700'.
Stems loosely clustered
in a fibrous, rooted caudex,
and bearing tufts of brown
leaves at the base. Flowers
pink purple.

Perezia thurberi Gray

Perezia (7, incl. *thurberi*,
10, 11, 12)

10250

Perymenium
mendezii DC.

var. *mendezii*

✓

—

✓

10222 Sept. 30 1955
Chihuahua, Mexico.
Same place as 10219.
Seeds mostly 4-8
mm. diam. Heads
depression. yellow,
with 7-9 rays.



Stems? (16)

10251 May 1, 1965

Dune grasslands.

Heavy sand dune country
23 miles southeast of
Las Alamos and 72 miles
southeast of Roswell.

Shrub about 60 ft.

Stems erect, branched

- erect, branched

leaves, as wing or

suberect. Ray mostly 8,

inner yellow (pale)

than semi-erect yellow.

Betlandiera lyrata Benth.

var. *lyrata* Pinkava

Betlandiera (7)

10252 - October 1, 1965

Durango, Mexico.

Same place as 10251.

Stems loosely clustered.
Plants tending to spread
by creeping roots. Heads
yellow, the rays mostly
about 13, a little paler
than the disk, soon de-
colorous.

Bahia absinthifolia Benth

Herb. Acad. Sci. 6.

10253 - Collected, 1951
Durango, Mexico
Same place as 10251.
Plants annual from a
short taproot. Heads
lemon-yellow. Rays mostly
about 13.

Gutierrezia glutinosa
(Schauer) Schultz Bip.
✓

✓

10253 - 15

1025 - October 1, 1965

Durango, Mexico.

In rocky alluvium along a
dry wash in grassy
savanna country 23 miles
southeast of Las Vigas
and 70 miles southeast of
Parral. Elevation about
6000 feet. Woody-based
herbs or semi-shrubs with
climbered stems. Leaves variable
in width on different plants, some-
times some of them subtrilobed.
Heads simple or corymbose. Rays mostly
about 13, sometimes as few as 8, often
deeper orange toward the base

Viguiera dentata (Cav.) Spreng. ✓
Urena (17) ✓

10255 - October 1, 1965

Same place as 10254.

Stems coarse, clustered
on a stout taproot and
branched caudex. Flowers
mostly 13, the corolla at
first whitish or ochro-
leucous, later dull laven-
der.

Brickellia scoparia (Dc.) Gray

Brickellia (10)

10256 - April 11, 1950

Camacho, Co., New Mexico,
sandy soil, at edge
of desert in rocky
area, about 23 miles
southwest of Las Alamos and
10 miles southeast of
Pecos. Elevation
6000 ft. ^{5000 ft.} Plant with a
single stout much branched
stem, leaves coarse app-
arently perennials, etc.
Specimens at herbaria single
plant seen. Corolla purple white.
Rays 2. Anthers 9.
Guardiola arguta (Gray) Robins.
* *Guardiola* 7

197. ... Station 1, 1925
Durango, Mexico. In rocky
sandy alluvium along a dry wash
in grassy savanna land 23
miles southeast of Las Vigas
and 70 miles south of
Parral. Elevation about 6500
feet. Plants annual, with
with a single erect stem or
several ascending stems.
Rays 5, the distal (third) yellow,
distally limited from the
orange proximal two-thirds.
Disk orange. Pappus of 2-3
transversely barbed awns.
Bidens ferulaefolia (Jacq.) DC.

Bidens (19) of 10236

10258 - October 1, 1965

Drepano
in savanna along the road
in grassy savanna land 15
miles southeast
Hills 90 and 95 miles
south-southeast of
Elevation about 6100 ft.
Semi-shrubs with cluster-
ed, winged stems 3-30 dm.
tall. Disk orange. Rays
orange or orange-yellow,
mostly about 13, occasi-
onally as few as 10

Viguiera linearis (Cav.)

Schultz Bip.

Viguiera

15

10257 October 1, 1955

La Durango, Mexico

La Zarca community (near
its upper limits) $5\frac{1}{2}$
miles east of La Zarca.

Elevation about 6100 feet.

Disk yellow. Rays 4-7,
most often 5, persistent,
white, sometimes becoming
screener tinted orange.
Stems clustered on a stout
taproot, forming broad
low mounds.

Zinnia acerosa (DC.) A. Gray

Zinnia (9)

10260 - October 1, 1965.
Same place as 10259.
Heads orange, discoid
Stems clustered on a
short taproot, forming
broad low mounds.

Dyssodia setifolia (Lag.)
Robins.

var. *setifolia*

495

Dyssodia setifolia

(5)

10261 - October 3, 1965

Quercus agrifolia

In semi-desert scrub
with *Acacia* and *Yucca*
Cymatium, about 17 miles
west-southwest of Phoenix.
Felsitic substrate.

Flowers about 6200 ft.
Stems 1.5-3 m. tall.
Disk yellow, inner
mostly about 8. pericarp
white, 1-2 cm.
long. Locally rare in
Santa Rita Mts.

Montanoa arborescens (D.C.) Schultz

Montanoa (15) Bip.

10262 - October 3, 1965
Same place as 10261
Shrub up to about 2
m. in height. Discoid
golden-yellow. Leaves
mostly opposite, or
sometimes some ternate
at the upper
ends of the stems.

Verbesina serrata Gay.
(discoid form)

Verbesina (15)

10263 - October 3, 1965

same place as 10261

Shrubs or semi-shrubs
up to about 1.5 m tall.
Leaves firm and harsh.

Heads orange yellow
with about 8 rays
or some fewer.

Peppers of 2 paleaceous
ones and some short
Rhamniaceae

Viguiera cordifolia Gray

10263 - 10/3/65

15

1001 - Oct. 3, 1964
Lampyris 1.5 /
Stems clustered in a
dense, moist caudex.
Leaves thin and soft,
erectly ascending, mostly
opposite, with some
in 2's or 3's, all
them alternate. Rays
12, after 10, yellow,
more deeply colored
toward base. Dish yellow.
Pipette 12 polycarous anthers
and 12 short stamens yellow.
Ligustrum dentata (Cav.) Spreng ✓

10265. October 3, 1967,
Durango, N.M.
Disturbed felsitic soil
along the roadside about
17 miles east-south east
of Durango, in thorn scrub
region. Elevation about
6200 feet. Interspersed
with but not very
annual. Rays 24-42,
bright pink-lavender.
Disk yellow.
Machroanthems
gymnocephalus (DC.) Shinn.

Machroanthems gymnocephalus (DC.) Shinn.

Perognathus

~~as~~ *mendenii* DC.

var. *mendenii*

10266





10266- October 3, 1965
Carrizosa, California
Same place as 10261.
Shrubs up to about 1 m.
tall. Heads yellow,
with 5-10 rather small
rays.

Psoralea arguta (Pursh) 15

10267 - October 3, 1964
(Ray white; disk yellow)
Same place as 10261

Erigeron delphinifolius Willd.
ssp. *neomexicanus* (Gray) Cronq.
var. *neomexicanus*

aff. *Erigeron delp.* (3)

1026 - Oct. 13 1911
Durango, Mexico.

On felsitic rock outcrop
in thorn-scrub region
about 17 miles east-
southeast of Durango.

Elevation about 6000.
Low, broadly rounded
shrub up to about 5 dm.
tall. Flowers white.

Stevia salicifolia Cav.

✓ ✓

Stevia

(15)

10269 October 4, 1965

Zacatecas, Mexico.

In open thorn shrub

community with

Acacia and *Opuntia*, on

ridge. Top $7\frac{1}{2}$ miles

south of Villa Pina.

Elevation about 1000.

Small plants \pm erect;

larger ones decumbent.

Rays mostly 5, white.

Long petioles. Disk

yellow.

Tridax coronopifolia

(Kunth) Hemsl.

Tridax 15)

1000 ft. alt. 1864
Lam. 1864
Plants slightly caespitose
Stems & leaves pale
greenish green, the
stems white,

Stevia micrantha Lag.

Stevia 157

10271 - October 4, 1965

Same place as 10269.

Plants aromatic.

Kaup 5, orange, marked
with vermilion near
the base. Disk orange,

Tagetes patula L. ✓✓

Tagetes (15)

10772 - October 4, 1965,
Same place as 10769.
Shrub or half shrub
3-10 dm. tall. Leaves
a peculiar bright
gray-green. Corolla pink
white, the tube somewhat
lavender-tinted.
Chromosome no. det. by
R. S. Jacobs as $11 = 12$.

Stevia salicifolia Cav.

10772

10. 73 - October 4, 1965

Same place as 10267.

Shrubs 1.5 - 3 m. tall.

Rays 5 - 10, often 8,
pure white, 1-2 in long
Dist yellow, large
invol. brownish
nigrescent young plants

Montanoa leucantha

(Lag.) Blake

Montanoa

10214 October 4, 1965
Zacatecas, Mexico - 2-4 miles
from town, on road to
commonly with trees
at a distance of $11\frac{1}{2}$ miles
south of Villa Rica.
Elevation about 1000 ft.
Tall shrub about 5 m
high. Leaves opposite, some
of them - 10 cm long
lobed. Herbs yellow,
with 5-10 rays. The large
leaves of the vigorous
young plants.

Viguiera quinqueradiata
(Cov.) Gray

Viguiera (15)

10275 - October 4, 1965

Zacatlan, Mexico.

Moist, low ground in
disturbed sites in
subtropical deciduous
forest about 21 miles
south of Jalapa.

Elevation about 4600'.

Collected small specimens;
larger plants up to
about 1 m. tall. Fls. ex-
posed, yellow.

Melampodium perfoliatum
(Cav.) H.B.K.

186/

Polygonum

10276 - October 6, 1965
Jalisco, Mexico: open
places in savanna region
17 miles north of

Extlahuacán, Jalisco, and
48 miles north of

Guadalupe. Elevation
about 5000 feet. Coarse

herbs with ascending
stems reaching to loosely

erect spikes about 2
m. tall. Heads ¹⁻⁶ per spike

with average diam. 13-24
mm. rays then 3.5-6 mm.

Pappus 2 rows of awns
and some shorter ones.
pachycephala (DC.) Hemsle
Viguiera (10, incl 3 short 1)
subtota

10277 - *S. alabamica*
Toluco, Mexico.

Along a small stream in
savanna region 11 miles
north of Tetla de la Cruz
Rio and 48 miles north

of Guadalajara. Elevation
about 5000 feet. Weak
shrubs growing up
among *Acacia*, *Prosopis*,
Opuntias and *Euphorbia*
reaching a height of 3 m.

Fls. orange yellow,
with mostly 11-15 rays.
Pappus of 2 plumose achenes and
some short glumes.

Rhysalepis palmieri (Gray) Blake
Vigier (5)

10278 - October 6, 1965
Salinas, Mexico.
Weed in a corn field
in savanna region 17 miles
west of Ixtlahuacan de
Reyes, and 40 miles north
of Guadalajara. Elevation
about 5000 feet.
Stems several on a short
herbaceous perennial root
stock, orange, with
reddish gray.

Dyssodia tagetiflora Lag.

Tagetes (6)

10279 - October 6, 1965
Jalisco, Mexico
Weed in corn field in
savanna country 17
miles n. of Ixtlahuacan
del Rio and 48 miles
north of Guadalajara
Elevation about 5000
feet. Bracts lined red.

Castilleja arvensis C. & S.
Det. Noel H. Holmgren

✓

Castilleja ①

10280 - Ocotillo 6145
Jalisco, Mexico. ~~Weed~~
Same place as 16776.
Rays yellow, 2-5,
usually 5.

Melampodium sericeum
Lag.

annual weed. (14)

10551 - Oct 6, 1965
Same place as 10273.
Fls 5, many short,
yellow.

Wet, muddy low field

Pectis prostrata Cav.

Targeted

(3)

10250 October 6, 1965
In
savanna country, verging
to subtropical deciduous
forest, 13 miles north of
Ixtlahuacan del Rio and
44 miles north of Guadalupe.
Elevation about 3500.
Leaves 4 in. by 1 in. small
tree up to about 6 m. tall
and 4 dm. thick at the base,
rough-barked, rather
salt-crusted. Heads yellow,
ray neutral, 5, or some-
times up to 6. Leaves opposite, or
the large detached leaves with
(and)

Sambucus racemosa
from negroes young
shoots.

Viguiera quinqueradiata
(Cav.) Gray ✓

✓

Viguiera ciliolata

July 3 - October 1, 1901.
Julesburg, Colorado. In open
oak prairie on sand dunes.
9 miles south of
Julesburg. In sand dunes
about 6400'. It is
solitary (seldom several)
and flowers white.
Stem serrate
Cav. and perhaps
hybridizing with it,
suggested by some

specimens with
more hirsute stems,
but no certain
F, hybrids seen.

Stevia rhombifolia HBK.

Stevia

6.

10284 - October 6
1951 Jalisco, Mexico,
Same place as 10283.

Stems clustered or
solitary, and
hirsute - erect or prostrate.
Flowers white,
growing with #10283,
and perhaps hybrid-
izing with it, but no
certain F₁ hybrids seen.

Stevia serrata Cav.

S. rhombifolia HBK.,

10235 - October 8, '65
Jalisco Mexico, in
a seepage area in
oak-juniper wood-
land 9 miles north of
Ixtlahuacan del Rio,
and 40 miles north
of Guadalajara. Stems
1' tall or several,
from a fibrous-rooted
creeping rhizome.

Stevia serrata Cav.

Stem 6

10286 - October 6, 1965,
Same place as 10255.
Flowers white,
Stems solitary.

Coccoloba (*Odontotrichum*)
sinuata Cerv.

✓

10267 - October 7, 1926
Agaves, Mexico.

Sierrita country 23
miles southwest of
Guadalupe. Elevation
about 5000 feet. Stems
solitary or paired, stout,
2-3 dm. in basal leaves
peltate, subequally cleft
with lobes beyond;
upper online leaves peltately
obovate, cleft, the others
much reduced. Flowers
white. *Cacalia* (*Psacalium*)
megaphylla Robins. + Greenm.

Cacalia (7) ✓ ✓

0288 - October 7, 1965
Jalisco, Mexico
Along fence-rows
near the south shore
of Lake Chapala about
42 road miles south
of Guadalajara. Elevation
about 500'. Rather
soft-wooded shrub
up to about 4 m. tall.
Rays white, mostly 5
per whorl. The detached
larger leaves with same
apexes, as from
young plants
Montanoa xanthifolia Schott & Bip.
Montanoa (15)

10289 - Cactaceae. Trunc.
lanceolatus, Mexico. Along
the roadside near the south
shore of Lake Chapala,
48 miles south of
Guadalajara. In a semi-
arid region. Stems 8-20 dm
tall, about 1 dm diam. -
erect, branched, shrubby for
the first 10 dm at the base, then
becoming more woody. Leaves
opposite, or the upper ones
alternate. Disk orange.
Ray yellow, mostly about 13.
Petals white, macrocephala Gray
Verbesina (15)

10290 - Oct. 11. 7 1/2
Jalisco, Mexico.
along the roadside
10291. Plants
up to about 5 m.
long. Leaves
all the same
long yellow, turning
red in age.

Simisia adenophora ✓
(Greenm.) Blake

Simisia (5)

10291- Feb. 7, 1904
Same place as 10287.
Plants about 5 dm
high. Leaves by 2 or 3
to a node. Flowers
white. Fruits green.

Zexmenia

ceanothifolia

Schultz Bip.

✓

Viguiera

11292 - October 7, 1965
Michoacan, Mexico.

In pockets of soil along
moist, felsitic cliffs
overlooking the southeast
shore of Lake Chapala,
4 $\frac{1}{2}$ miles east of Cojumatlan.
Elevation about 5600'.
Plants annual, single-
stemmed. Heads orange,
discoïd.

Bidens bicolor Gray
var. *purpurensis* Scherff

Bidens (3) ✓

10293 - October 7, 1965

Michoacan, Mexico

Open, thorn - brush slopes

6 miles west Sahuayo

and 6 miles east of

Cojumatlan. Elevation

about 5900'. Plants

perennial, with clustered

stems 10-18 dm tall,

appearing semi-shrubby,

but the stems apparently

dying ~~back to~~ back to the

ground each year. Heads

yellow, with (13) 16-25

rays. *Viguiera linearis*

(Cav.) Schultze

Bip.

845

Viguieroid

(15)

10294 - October 8, 1965.

Michoacan, Mexico.

Suaresin pastured
thorn-savanna in subtropi-
cal deciduous forest zone,
27 miles east of ~~Juchitán~~.

Jiquilpan and 10 miles
west of Zamora. Elevation
about 5600'. Rays 8 or
not infrequently 9,
deep orange, with paler,
more orange-yellow margins.

Zinnia haageana

Regel

Zinnia (16)

10295 - October 8, 1965
~~to~~ Same place as 10294.
Stems up to about 2 m.
tall, clustered on a
fibrous-rooted crown,
densely brown-woolly
at the base. Flowers
white, sometimes
faintly lavender-tinted.

Perezia reticulata ✓
(Lag.) Gray

Perezia ~~(+5)~~ (6) ✓

10296 - October 8, 1965
Michoacan, Mexico.
Pastured thorn-savanna
in subtropical ~~deciduous~~
deciduous forest zone,
also a roadside weed;
27 miles east of Jiquilpan
and 10 miles west of
Zamora. Elevation
about 5600'. Heads
disciform, orange.
Both outer and inner
pappus scales disintegrated into
anthesis.

Dyssodia porophylla (Carr) Gre.
var. *porophylla*

Dyssodia (4)

12197 (2198-8, 1900)

Michoacan, Mexico

Open grassy area on
pine woods. 1000 ft. in
altitude. 10 miles east
southwest of Zamora.
Elevation about 5000
ft. Rays mostly 5,
broadly notched,
deep orange toward the
margin and yellow
toward the center.

Tagetes heterocarpa
Rydb.

Tag. (10)

10 - Oct 8, 1965
M. L. Luman. Kalamazoo.

1112. human. 10000.

moist rocky slopes in
 open pine-wood
 in the mts. 15 miles
 east southeast of
 Zamora. Elevation about
 5500 ft. The perennial
 stems to somewhat shrubby
 at the base with loosely
 ascending stems. Leaves
 simple, ovate-lanceolate,
 Ray mostly 8 purple-
 striped. Involucres slender
 hairy. Petals yellow.
Bidens aequisquama (Fern.) Scherff

10299 - October 8, 1965
Ixcateopan, Mexico.
On steep, rocky (volcanic)
northeast slopes in
oak-pine woodland in
the mts. 25 miles east-
southeast of Zamora.
Elevation about 6600'.
Shrubs 2-3 m. tall. Rays
yellow, about 13. Disk
more orange.

Verbesina sphaerocephala ✓
Gray

Verbesina

(15)

103. 2. 2. 1. 2. 1. 2. 1. 2. 1.
Stachys, 103. 1. 2. 1. 2. 1. 2. 1. 2. 1.
Lampyris 103. 1. 2. 1. 2. 1. 2. 1. 2. 1.
Stachys solitary 1. 2. 1. 2. 1. 2. 1. 2. 1.
Lampyris fibrous-rooted
green, flowers purple.

Eupatorium pulchellum
H.B.K.

Var. in (3)

10301 - Altitude 8,000 ft.
Chihuahua, Mexico.

Stems densely ascending
up to nearly 2 m. tall,
scabridly pubescent on
lower half at the base,
flowers varying from
pale pink to deep
red. Heads solitary,
or rarely
small mostly about 13
mm. diam.

Viguiera excelsa (Willd.)

Benth. + Hook. f.

Viguiera (C) ✓
✓

5000' Alt. 10/10/1911
Mimicra, Mexico.
In open field, mostly
the soil, about 100 ft. west of
Z. 1911. (53 miles west of Mexico City.)
The soil is sandy, light brown
and very dry. The plants
are small, mostly 15-20 cm. high,
with small, narrow leaves.

Montanoa atborens (D.C.)
✓ Schultz Bip.

10303 - Oct 1927

near, ...

... ..

... ..

... ..

6000

... ..

6000.

... ..

... ..

... ..

Castilleja tenuifolia M. & G.

det. Noel H. Holmgren

... .. 12)

10304 - October 7, 1951
Same place as 10303
Same herb with
disturbed, exposed
morning 5-15 m. tall.
Liliaceous up to 30 cm.
white flowers
with mostly 5 rays

Senecio heracleifolius Hemsl.

✓

✓

Senecio heracleifolius Hemsl.

10305. alt. 9,1965

Highway 16

on a steep slope on
the Apurimac River

(potential forest land)

at a low summit 6 or
7 miles east of Arequipa.

Altitude about 6600.

Flowers white

Cacalia (Odontotrichum)

sinuata Cerv.

✓

✓

(Cacalia 16)

10306 2 July 9, 1935
Michoacan Mexico
Toll-Opentia's summit
at the top of the mountain
a few miles west of Morelia,
Elevation about 6600
feet. Shrub, or
occasionally solitary,
in a fibrous-rooted
crack. Flowers green.

Stevia eupatoria (Spreng.)
Willd.

2000 (7)

1035) 10/10/92
Michigan. Native.
Some plants noted to
be in flower. Plant
about 1 ft. tall. Bright
purple flowers.

Ageratum corymbosum
Zuccagn.

1036)

10/10/92
(15)

0738 - Oct. 10 - 9. 1965

Alfred and Alice.

On the slope of the coast
bank in all places
most common. In the
lowland. In the wet
Mudra. In the
lowland. In the wet
Mudra. In the
lowland. In the wet
Mudra. In the

Sabazia humilis (H.B.K.)

Cass.

2 June 19

10309 - October 9, 1965

Samplings 10309.

Plants are mostly at the base.

Rays mostly about
8, white. Disk yellow.

Bidens pringlei Greenm

✓
✓
✓

Bidens (2)

10000. 25th. 1900.
Michigan. Illinois

A. most abundant here
in the dry places and
along the banks. 19
miles east of ...
...
...
... after the ...
... leaves
...
...
... with
... (some) ...

Bidens ostruthioides (DC.) Schultz Bip.
var. *ostruthioides* Scherff

10311) - October 10, 1941
Michigan
On a open slope and
bank of river for
about 100 yds. with
m^{ts}. about 35 miles
east of Marquette. Eleva-
tion abt. 1000 ft.

Soft wooded shrubs
near river to it.
Heads yellow with
brown rays.

Senecio stoechadiiformis DC.

✓✓

Senecio stoechadiiformis (L.)

2042 - 2 Sept. 1965

Pine-forest region
in the north, about 1 mile
west of ... Elevation
about 9000'. Rays mostly
yellow ...

Tagetes foetidissima DC.

July 10 1925
Michigan
Tremont
In pine-
35 miles
about
half
Herbyellow,
with mostly 8 rays.

Coreopsis rudis
(Benth) Hemsl.

12000 (October)
Near road station,
On steep banks and cliffs
(in some) in subter-
restrial regions 1000 ft
high in 7 miles or about
around Hiram, Texas
then about 5 mi.
Half shrubs up to about
2 m. tall. Rays rather
light yellow - numerous,
5 sometimes 10, 12
long.

Simsia grayi Blake

Simsia (12)

10315 - October 10, 1955
Pitkin Co. Colorado

Openings in subalpine
deciduous forest country
7 miles southeast of

Snodgrass Hill. Elevation
about 13,000'. Rather
soft-wooded shrubs up
to about 3 m. tall. Leaves
white, mostly about 8.
Dich. yellow. The large de-
tached leaves with some
apical veins are brown.
Large overhanging shrubs.

Montanosa arborescens (DC.) Schultze
Bip.
11/1/55

10000 ...
Whickham ...
...
Rather soft - ...
Shoulder up to ...
... tall. Heads yellow.
bisect or with 1 or 2
short rays.

V. vesina ...
...
... vel aff.

Verbesina (5)

10315 - Oct. 11, 1965

Mexico, Mexico.

In the pedregal at the
south edge of Mexico
City a mile beyond
the Ciudad Universitaria.
Elevation about 7600'.

Sparsely branched
shrubs about 1.5-2
m. tall. Flowers pale
lavender.

Lagascea rubra H.B.K.

area (9)

10315 - October 11, 1961.
Same place as 10313.
Plant annual. Flowers
white, faintly pinkish
tinted.

Florestina pedata
(Cav.) Cass.

V,
/

Florestina (15)

1057 October 11, 1965

Same place as 1056

Shrubs 1-2 m. tall.

Rays white, mostly 5.

Cisk white.

Montanoa floribunda ✓

(H.B.K.) Schultz Bip. ✓

Montanoa 12

1450 Collected 11, 1965
Lamiaceae
Herbs about 2 m. tall,
the stems erect and a
fibrous-rooted base.
Leaves opposite below,
alternate above. Heads
of flowers all mostly
10-12 rays.

Viguiera adenophylla Blake

1451
- *Viguiera* (10)

10319 - October 12, 1965

Madison, 4 Miles

Sample no 10320

Light yellow leaves

white, rather short

0-5, the number varying

2-3 in. long.

Cosmos parviflorus
(Jacq.) Pers.

11836

Bakers (15)

10320 Oct. 12 - 1211965
Mexico, Mexico
In disturbed site
on mountain slopes
18 miles south of
Mexico City, on the
Mexican Highway to
Guernavaca. Elevation
about 7000 ft.
Herbaceous, 18 ft. tall.
perennial.

10321
Heterotheca inuloides
Cass.

Heterotheca T.

1037 1-2756-1241

Medero, Mexico

Low forest on mt.

Flowers 18 miles south
of Medero City, along
the free road to
Cuernavaca. Elevation
about 1000.

Weak half shrubs,
less than 1 m. tall.

Buds ~~orange~~ red
or nearly scarlet.

Castilleja tenuiflora Benth.
det. Noel H. Holmgren

Castilleja (4)

Stevia nelsonii Robins.
Linn. 1825
Linn. 1825

Stevia nelsonii Robins.



1923 Oct 12
Hill Co. Tex.
Highway near snakes
about 1/2 mile from
Pampa on highway
and on border fence
about 1/2 mile from
the road about 1 mile
south of the locality.
Elevation about 960.
Stony, eroded, shaly
soil, yellowish
brown, sandy, red
mottled, light.

Senecio brevistatus Klatt ✓
Perhaps better referred to
Cercaria (S) *Cocalia*

10551. *Portulaca* 12. 1. 1912
Mexico, Mexico,
organic soil in grassy
savanna to *Impatiens* -
type volcanic terrain
near the summit of
Mounts Toluca, Popocate-
petl, and Cuernavaca
about 27 miles south
of Mexico City, altitude
about 7000 feet. Leaves
well developed and ter-
minally branched, with
stems rooting at nodes,
flowers yellow, 5-merous,
5-lobed, 5-merous.
Portulaca anthemoides DC. ✓
Portulaca

525 - ...
 p. 12, ...

Ref 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847,

[Faint handwritten notes at the bottom of the page]

Range 2-8, common in 5
and under forest & usually
in the lower part.

Sebania humilis (H.B.K.)
Cass. ✓✓

Cass.

12.

Sept. 17, 1902 (13)



10
11

100

VH United A + R
100

Tizapan el Alto	161.9
entre Michoacan	167.9 - 1.2.
Cohumatlan	176.5
Viga	82.2
Sahuayo	87.8
Jiquilpan full	12.0
collecting	218. ,
Zamora	7 .

eddy 1. 11.

392.0

collecting

397.0

Zitcuaro

20. +

Parral	54.5
" sit. full	58.2
Villa Matamoros	72.0
Villa Ocampo	95.6
Las Mier	302.8
and reg. 1	374.8
Villa Hidalgo	333.7
V. Iguala	348.2
La Zarca	361.5
Zinnia	69.65
Mojave	117.5
Tamara	458
full	464
Cuenca	1119
Verbanis	
Gran. mas	

Measurements
collected

Zacatechula

Oct. 30 to 6.

Villa Nueva

Oct. 7

Jalisco

Poligrama

Head

550'

Top / baranca

Ex + lahuacan del Rio 027

Area around

And Vig.

6400'

Leonas

Head full 95.5

El Molino

0

835.0

612.1

892.

911.8

996.

15004.1

43.4

47.2

051.0

093.0

22.9

